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OM protein - protein search, using sw model

Run on: March 17, 2003, 07:12:51 ; Search time 32.542 seconds
(without alignments)
118.747 Million cell updates/sec

Title: US-09-787-082-6

Perfect score: 173

Sequence: 1 CKGKACSRMLMYDCTGSCRSRGKCTRNG 29

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

A_Geneseq_101002.*
1: /SIDSL1/gcgdata/geneseq/geneseqp-embl/AA1980.DAT.*
2: /SIDSL1/gcgdata/geneseq/geneseqp-embl/AA1981.DAT.*
3: /SIDSL1/gcgdata/geneseq/geneseqp-embl/AA1982.DAT.*
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20: /SIDSL1/gcgdata/geneseq/geneseqp-embl/AA1999.DAT.*
21: /SIDSL1/gcgdata/geneseq/geneseqp-embl/AA2000.DAT.*
22: /SIDSL1/gcgdata/geneseq/geneseqp-embl/AA2001.DAT.*
23: /SIDSL1/gcgdata/geneseq/geneseqp-embl/AA2002.DAT.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	173	100.0	29	AA1985	Amino acid sequenc
2	173	100.0	32	AA1986	Amino acid sequenc
3	161	93.1	32	AA1987	Amino acid sequenc
4	151	87.3	25	AA1988	MVIIA omega conoto
5	151	87.3	25	AA1989	MVIIA/SNX-111. Syn
6	151	87.3	25	AA1990	MVIIA/SNX-111. Syn
7	151	87.3	25	AA1991	Omega conotoxin MV
8	151	87.3	25	AA1992	SNX-279, omega con
9	151	87.3	25	AA1993	Natural omega-cono
10	151	87.3	25	AA1994	Omega conopeptide

11	151	87.3	25	19	AA1985	Conus genus natura
12	151	87.3	25	20	AA1986	Omega-conotoxin OC
13	151	87.3	25	20	AA1987	Omega-conopeptide
14	151	87.3	25	21	AA1988	Omega-conopeptide
15	151	87.3	25	21	AA1989	Natural omega cono
16	151	87.3	25	21	AA1990	Amino acid sequenc
17	151	87.3	25	22	AA1991	Omega-conch toxin
18	151	87.3	25	22	AA1992	Toxin peptide SQ
19	151	87.3	25	22	AA1993	Primary sequence o
20	151	87.3	25	22	AA1994	Cone snail w-conot
21	151	87.3	26	12	AA1995	Omega conotoxin pe
22	151	87.3	26	14	AA1996	SNX-193. Syntheti
23	151	87.3	26	18	AA1997	SNX-193, omega con
24	151	87.3	26	21	AA1998	Analogue omega con
25	151	87.3	27	12	AA1999	Omega conotoxin pe
26	151	87.3	27	12	AA2000	Omega conotoxin pe
27	151	87.3	27	14	AA2001	SNX-196. Syntheti
28	151	87.3	27	14	AA2002	SNX-197. Syntheti
29	151	87.3	27	18	AA2003	SNX-196, omega con
30	151	87.3	27	18	AA2004	SNX-197, omega con
31	151	87.3	27	21	AA2005	Analogue omega con
32	151	87.3	27	21	AA2006	Analogue omega con
33	148	85.5	25	12	AA2007	Omega conotoxin pe
34	148	85.5	25	22	AA2008	Omega-conch toxin
35	147	85.0	25	22	AA2009	Omega-conch toxin
36	147	85.0	25	22	AA2010	Omega-conch toxin
37	145	83.8	25	12	AA2011	Omega conotoxin pe
38	145	83.8	25	12	AA2012	Omega conotoxin pe
39	145	83.8	25	12	AA2013	Omega conotoxin pe
40	145	83.8	25	14	AA2014	AA2013763
41	145	83.8	25	14	AA2015	AA2013764
42	145	83.8	25	14	AA2016	AA2013766
43	145	83.8	25	14	AA2017	AA2013767
44	145	83.8	25	14	AA2018	AA2013770
45	145	83.8	25	14	AA2019	AA2013771

ALIGNMENTS

RESULT 1

AA1985

ID AA1985 standard; peptide; 29 AA.

XX AA1985

AC AA1985

DT 25-JUL-2000 (first entry)

XX Amino acid sequence of a cyclised conotoxin peptide.

XX Cyclised conotoxin; omega-conotoxin; neurological disorder; pain; stroke;

KW traumatic brain injury; migraine; epilepsy; Parkinson's disease;

KW Alzheimer's disease; multiple sclerosis; depression; alpha-conotoxin;

KW neuropsychiatric disorder; schizophrenia; Tourette's syndrome;

mu-conotoxin.

XX Synthetic.

OS Conus sp.

XX Conus sp.

XX Key

XX Location/Qualifiers

FT Misc-difference 1..29

FT /note= "peptide is cyclised via these residues"

FT Peptide 1..25

FT /note= "conotoxin"

FT Peptide 26..29

FT /note= "linker"

XX WO200015654-A1.

XX 23-MAR-2000.

XX 14-SEP-1999;

XX 99WO-AU00769.

PD 23-MAR-2000.
 XX
 PF 14-SEP-1999; 99WO-AU00769.
 XX
 PR 14-SEP-1998; 98AU-0005895.
 XX
 PA (UYOU) UNIV QUEENSLAND.
 XX
 PI Craik DJ, Daly NL, Nielsen KJ;
 XX
 DR WPI; 2000-271376/23.
 XX
 PT Novel cyclized conotoxin peptides useful in the therapeutic treatment
 XX of diseases in humans
 XX
 PS Claim 10; Page 31; 43pp; English.
 XX
 CC AAY84654-58 represent cyclised conotoxin peptides of the invention. The
 CC cyclised peptides have improved properties, compared to their linear
 CC counterparts. These include resistance to cleavage by proteases, high
 CC chemical stability, improved biophysical properties, reduced side
 CC effects and improved bioavailability. Cyclised omega-conotoxin peptides
 CC block N-type calcium channels, and so may be useful in the treatment of
 CC neurological disorders such as acute and chronic pain, stroke, traumatic
 CC brain injury, migraine, epilepsy, Parkinson's disease, Alzheimer's
 CC disease, multiple sclerosis, and depression. Alpha-conotoxins may be
 CC useful in the treatment of neuropsychiatric disorders such as
 CC schizophrenia, Parkinson's disease, Alzheimer's disease and Tourette's
 CC syndrome. Mu-conotoxins interact with neuronal channels and may be used
 CC to treat chronic and neuropathic pain. The cyclised conotoxin peptides
 CC can be also used as neuropharmacological probes. Antibodies raised
 CC against the peptides are useful as therapeutic or diagnostic agents,
 CC and can be used to screen for the peptides.
 XX
 XX Sequence 32 AA;
 SQ
 Query Match 93.1%; Score 161; DB 21; Length 32;
 Best Local Similarity 100.0%; Pred. No. 7e-11;
 Matches 27; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 CKGKGAKCSRLMYDCTGSCRSKCTR 27
 DB 5 CKGKGAKCSRLMYDCTGSCRSKCTR 31
 RESULT 4
 AAR32777
 ID AAR32777 standard; peptide; 25 AA.
 XX
 AC AAR32777;
 XX
 DT 28-JUN-1993 (first entry)
 XX
 DE MVIITA omega conotoxin peptide.
 XX
 KW OCT; neuronal damage reduction; ischemia; secondary damage; stroke.
 XX
 OS Synthetic.
 XX
 PN US5189020-A.
 XX
 PD 23-FEB-1993.
 XX
 PF 02-AUG-1990; 90US-0561766.
 XX
 PR 22-NOV-1989; 89US-0440094.
 XX
 PR 02-AUG-1990; 90US-0561766.
 XX
 PA (NEUR-) NEUREX CORP.
 XX
 PI Bitner RS, Bowersox SS, Fox JA, Miljanich GP, Tsubokawa M;
 XX Valentino KL, Yamashiro DH;
 XX

DR WPI; 1993-085564/10.
 XX
 PT Reducing neuronal damage due to ischaemia - involves using omega
 XX conotoxin peptide or fragment
 XX
 PS Disclosure; Fig 1; 32pp; English.
 XX
 CC The sequence is that of the MVIITA omega conotoxin (OCT) peptide
 CC which can bind to an OCT binding protein, inhibit voltage-gated
 CC calcium currents selectively in neuronal tissue and inhibit neuronal
 CC transmitter release selectively in neuronal tissue. These properties
 CC all occur within the range of those of MVIIB, GVIIA, RVIA, or pref.
 CC MVIIA and GVIA OCTs. The peptide can be used in reducing or
 CC preventing both anatomical and functional secondary damage related
 CC to ischemia, generally as associated with stroke.
 XX
 SQ Sequence 25 AA;
 Query Match 87.3%; Score 151; DB 14; Length 25;
 Best Local Similarity 100.0%; Pred. No. 6.9e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 RESULT 5
 AAR37752
 ID AAR37752 standard; peptide; 25 AA.
 XX
 AC AAR37752;
 XX
 DT 08-SEP-1993 (first entry)
 XX
 DE MVIITA/SNX-111.
 XX
 KW Ischaemia; neuronal; omega-conotoxin; OCT; MVIITA; MVIIC; MVIID;
 KW MVIIB; GVIA; GVIIA; RVIA; SVIA; TVIA; SVIB; SNX-207; stroke;
 KW delayed treatment; antihistamine; blood pressure;
 KW N-type voltage-gated Ca currents;
 KW N-channel mediated neurotransmitter release.
 XX
 OS Synthetic.
 XX
 PH Key Location/Qualifiers
 FT Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 XX
 PN WO9310145-A.
 XX
 PD 27-MAY-1993.
 XX
 PF 12-NOV-1992; 92WO-US09766.
 XX
 PR 12-NOV-1991; 91US-0789913.
 XX
 PR 17-JUL-1992; 92US-0916478.
 XX
 PA (NEUR-) NEUREX CORP.
 XX
 PI Bitner RS, Bowersox SS, Fox JA, Miljanich GP, Valentino KL;
 XX Yamashiro DH;
 XX
 DR WPI; 1993-182487/22.
 XX
 PT Redn. of neuronal damage caused by ischaemia - by admin. of cpds.
 XX that bind specifically to omega-conotoxin MVIITA binding sites
 XX
 PS Disclosure; Fig 1; 103pp; English.
 XX
 CC Ischaemia-related neuronal damage in mammals is reduced by admin.,
 CC 4-24 hr after onset of ischaemia, of a cpd. (I) which binds

CC selectively to an omega-conotoxin (OCT) MVIIA site in neuronal
 CC tissue. (1) has selectivity at least 100 expressed as ratio of
 CC binding affinity for the MVIIA site to that for the MVIIIC site.
 CC (1) is one of the OCTs MVIIA, MVIIIB, GVIA, GVIIA or RVIA or it is
 CC the cpd. SNX-207. (1) is esp. used to reduce neuronal damage
 CC caused by stroke. By delaying admin. for some time (compare
 CC US051403 where cpds. are given within 1 hr of the onset of
 CC ischaemia) a greater redn. in neuronal damage is achieved. (1) is
 CC admin. e.g. by intracerebroventricular (ICV) injection at 0.1-20
 CC microg/kg, but can also be given i.v. (opt. after treatment with
 CC antihistamines to minimise redn. in blood pressure caused by (1)).
 CC (1) is also at least as effective as the specified conotoxins for (1).
 CC selective inhibition of N-type voltage-gated Ca currents in neuronal
 CC tissue and (2) selective inhibition of N-channel mediated
 CC neurotransmitter release in neuronal tissue.
 CC Primary sequences of omega-conopeptides are given in AAR37752-62.
 CC Several analog omega-conopeptides are given in AAR37763-76.
 CC
 XX

SQ Sequence 25 AA;

Query Match 87.3%; Score 151; DB 14; Length 25;
 Best Local Similarity 100.0%; Pred. No. 6.9e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 |||||
 Db 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 6

AAR39608
 ID AAR39608 standard; peptide; 25 AA.

XX AAR39608;

DT 20-DEC-1993 (first entry)

XX MVIIA/SNX111.

DE Omega conopeptide; OCT; analgesia; inhibition; voltage-gated;
 KW calcium channel; neurone; contraction; guinea pig; ileum;
 KW MVIIA; binding site; toxin; marine; snail; Conus; opiod;
 KW chronic pain; narcotics.

XX Synthetic.

XX Key Location/Qualifiers

FT Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25

XX WO9313128-A.

XX 08-JUL-1993.

XX 30-DEC-1992; 92WO-US11349.

XX 30-DEC-1991; 91US-0814759.

XX (NEUR-) NEUREX CORP.

XX Gohl K, Justice A, Miljanich GP, Singh T, Valentino KL;

XX WPI; 1993-227270/28.

XX Use of omega-cono-peptide(s) which selectively inhibit
 PT voltage-gated calcium channels - to induce analgesia, enhance
 PT opiate analgesics, treat pain etc.

XX Claim 1; Fig 1; 90pp; English.

XX The sequences given in AAR39608-30 are omega conopeptides (OCTs) and
 CC derivatives of these, which may be used to produce analgesia in a

CC mammal. These OCTs inhibit voltage-gated calcium channels
 CC selectively in neuronal tissue. This is shown by the peptides
 CC ability to stimulate contraction in guinea pig ileum and to bind to
 CC OCT MVIIA binding sites present in neuronal tissue. OCTs are
 CC components of peptide toxins derived from marine snails of the genus
 CC Conus, and act as calcium channel blockers. These OCTs may be used
 CC to replace opiods in the treatment of chronic pain or to reduce the
 CC opiod dosage required. This helps to reduce dependence on and
 CC tolerance to opiod narcotics.

XX Sequence 25 AA;

Query Match 87.3%; Score 151; DB 14; Length 25;
 Best Local Similarity 100.0%; Pred. No. 6.9e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CKGKGAKCSRLMYDCTGSCRSKGC 25
 |||||
 Db 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 7

AAR76089
 ID AAR76089 standard; peptide; 25 AA.

XX AAR76089;

AC 02-FEB-1996 (first entry)

XX Omega conotoxin MVIIA peptide.

DE Omega conotoxin; marine snail; Conus; voltage-gated Ca channel blocker;
 KW synaptosome; membrane; fish electric organ; mammalian brain; ischaemia;
 KW binding protein; binding affinity; stroke.

XX Conus sp.

XX Key Location/Qualifiers

FT Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 FT Modified-site 25
 FT /note= "amidated C-terminus"

XX US5424218-A.

XX 13-JUN-1995.

XX 22-NOV-1989; 89US-0440094.

XX 02-AUG-1990; 90US-0561766.

XX 22-NOV-1989; 89US-0440094.

XX 23-MAR-1992; 92US-0855269.

XX 04-NOV-1993; 93US-0147714.

XX (NEUR-) NEUREX CORP.

XX Bitner RS, Bowersox SS, Fox JA, Miljanich GP, Valentino KL;

XX Yamashiro DH;

XX WPI; 1995-223694/29.

XX Identifying cpds. able to reduce neuronal damage caused by ischaemia

PT - by measuring their affinity to omega conotoxin MVIIA binding site

PT and ability e.g. to inhibit voltage gated calcium channels

XX Disclosure; Fig 1; 31pp; English.

XX The peptides AAR76089-95 are naturally occurring omega conotoxin (OCT)

CC peptides derived from marine snails of the Conus genus. The peptide

CC sequences were used to chemically synthesise the OCT peptide fragments

CC AAR76096-R76109. The OCT peptides act as voltage-gated Ca channel

CC blockers by binding to a 210 kD protein from synaptosomal membrane

CC preparations from fish electric organ or mammalian brains. The peptides
 CC and their synthesised fragments can be used to screen for compounds that
 CC bind to the OCT binding protein, by displacing a high affinity labelled
 CC OCT, such as MW1A, from a synaptosomal membrane preparation. The
 CC compounds should have binding affinities and activities at least equal to
 CC those of the natural peptides (K_i 0.44-324 nM). The screened compounds
 CC are potentially useful in treating ischaemic conditions, esp. stroke, and
 CC can reduce sec. anatomical and functional damage associated with those
 CC conditions.

SQ Sequence 25 AA;
 Query Match 87.3%; Score 151; DB 16; Length 25;
 Best Local Similarity 100.0%; Pred. No. 6.9e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 CKGKGAKGSRMLYDCTGSCRSKGC 25
 |||||
 DB 1 CKGKGAKGSRMLYDCTGSCRSKGC 25

RESULT 8
 AAW19569
 ID AAW19569 standard; peptide; 25 AA.
 XX AC AAW19569;
 XX DT 14-OCT-1997 (first entry)
 XX DE SNX-279, omega conopeptide derivative used for pain relief.
 XX Conopeptide; cone snail; pain; analgesic; neuropathy; epidural;
 KW N-type voltage-sensitive calcium channel; block; Conus.
 KW Synthetic.

XX Key Location/Qualifiers
 FH Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Misc-difference 12
 FT /label- Met(O)
 FT /note= "sulphoxymethionine"
 FT Disulfide-bond 15..25
 FT Modified-site 25
 FT /note= "amidated"

XX WO9701351-A1.
 XX 16-JAN-1997.
 XX 26-JUN-1996; 96WO-US11041.
 XX 08-MAR-1996; 96US-0613400.
 XX 27-JUN-1995; 95US-0496847.
 XX (NEUR-) NEUREX CORP.
 XX Adriaenssens PI, Amstutz GA, Bowersox SS, Gadbois T;
 PI Gohil K, Kristipati R, Luther RR, Pettus MR;
 XX WPI; 1997-100012/09.

XX Stable omega conopeptide compositions - for producing analgesia and
 XX for inhibiting progression of neuropathic pain disorders
 XX Claim 3; Fig 3; 47pp; English.

XX AAW19555-W19572 are omega conopeptides (OCs) derived from natural
 CC peptides from Conus sp. (cone snails). The peptides and their analogues
 CC are used as analgesics acting by blocking N-type voltage-sensitive
 CC calcium channels. The OCs can be used to treat neuropathic pain as a
 CC result of e.g. insult to the spinal cord or peripheral nerves, cancer,
 CC bone degenerative diseases, AIDS, reflex sympathetic dystrophy, herpes

CC zoster neuropathy, diabetic neuropathy, hyperesthesia, allodynia or
 CC hyperalgesia. The OCs are preferably administered in a medicament via
 CC an epidural route in a continuous infusion or sustained release
 CC formulation. The OCs can provide pain relief when administered
 CC epidurally in the absence of a permeation enhancer, at doses that are
 CC comparable to effective analgesic doses using intrathecal administration.
 CC OC formulations comprising an OC and a carboxylic acid buffer
 CC anti-oxidant. They also confer stability to solutions containing them for
 CC prolonged treatment methods and long-term storage.

SQ Sequence 25 AA;

Query Match 87.3%; Score 151; DB 18; Length 25;
 Best Local Similarity 100.0%; Pred. No. 6.9e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 CKGKGAKGSRMLYDCTGSCRSKGC 25
 |||||
 DB 1 CKGKGAKGSRMLYDCTGSCRSKGC 25

RESULT 9
 AAW19544
 ID AAW19544 standard; peptide; 25 AA.
 XX AC AAW19544;
 XX DT 13-OCT-1997 (first entry)
 XX DE Natural omega-conopeptide MWIIA/SNX-111 used for pain relief.
 XX Conopeptide; cone snail; pain; analgesic; neuropathy; epidural;
 KW N-type voltage-sensitive calcium channel; block; Conus.
 KW Conus sp.

XX Key Location/Qualifiers
 FH Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 FT Modified-site 25
 FT /note= "optionally amidated"

XX WO9701351-A1.
 XX 16-JAN-1997.
 XX 26-JUN-1996; 96WO-US11041.
 XX 08-MAR-1996; 96US-0613400.
 XX 27-JUN-1995; 95US-0496847.
 XX (NEUR-) NEUREX CORP.
 XX Adriaenssens PI, Amstutz GA, Bowersox SS, Gadbois T;
 PI Gohil K, Kristipati R, Luther RR, Pettus MR;
 XX WPI; 1997-100012/09.

XX Stable omega conopeptide compositions - for producing analgesia and
 XX for inhibiting progression of neuropathic pain disorders
 XX Claim 3; Fig 1, Fig 3; 47pp; English.

XX AAW19544-W19553 are naturally occurring omega conopeptides (OCs)
 CC isolated from Conus sp. (cone snails). The peptides and their analogues
 CC are used as analgesics acting by blocking N-type voltage-sensitive
 CC calcium channels. The OCs can be used to treat neuropathic pain as a
 CC result of e.g. insult to the spinal cord or peripheral nerves, cancer,
 CC bone degenerative diseases, AIDS, reflex sympathetic dystrophy, herpes
 CC zoster neuropathy, diabetic neuropathy, hyperesthesia, allodynia or
 CC hyperalgesia. The OCs are preferably administered in a medicament via
 CC an epidural route in a continuous infusion or sustained release

CC formulation. The OCs can provide pain relief when administered
 CC epidurally in the absence of a permeation enhancer, at doses that are
 CC comparable to effective analgesic doses using intrathecal administration.
 CC OC formulations comprising an OC and a carboxylic acid buffer
 CC anti-oxidant. They also confer stability to solutions containing them for
 CC prolonged treatment methods and long-term storage.

XX Sequence 25 AA;

Query Match 87.3%; Score 151; DB 18; Length 25;
 Best Local Similarity 100.0%; Pred. No. 6.9e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CKGKGAKCSRLMYDCTGSCRSKGK 25

Db 1 CKGKGAKCSRLMYDCTGSCRSKGK 25

RESULT 10

AAW12967

ID AAW12967 standard; peptide; 25 AA.

XX

AC AAW12967;

XX

DT 22-APR-1997 (first entry)

XX

DE Omega conopeptide SNX-111.

XX

KW Omega conopeptide; analgesic; treatment; neuropathic pain;
 KW inhibition; neuronal damage; schizophrenia; tardive dyskinesia;
 KW analgesia; acute dystonic reactions; inflammation; epilepsy.

XX

OS Synthetic.

XX

PN USS587454-A.

XX

PD 24-DEC-1996.

XX

PF 30-DEC-1991; 91US-0814759.

XX

PR 15-APR-1993; 93US-0049794.

XX

PR 30-DEC-1991; 91US-0814759.

XX

PR 30-DEC-1992; 92WO-US11349.

XX

PA (NEUR-) NEUREX CORP.

XX

PI Gohil KC, Justice A, Miljanich GP, Singh T, Valentino KL;

XX

DR WPI; 1997-064830/06.

XX

PT Omega conopeptide(s) - useful as analgesics, esp. for treating
 PT neuropathic pain

XX

PS Example 1; Columns 39-40; 58pp; English.

XX

CC The present peptide is an omega conopeptide, useful as an
 CC analgesic, especially for treating neuropathic pain. The peptide,
 CC which can be prepared by solid phase synthesis, can also be used to
 CC inhibit neuronal damage and treat schizophrenia, tardive
 CC dyskinesia, acute dystonic reactions, inflammation and epilepsy.
 CC In a rat paw formalin test, the peptide had an ED50 of 0.011 microg
 CC in phase 1, and 0.011 microg in phase 2 (by intrathecal
 CC administration).

XX

SQ Sequence 25 AA;

Query Match 87.3%; Score 151; DB 18; Length 25;

Best Local Similarity 100.0%; Pred. No. 6.9e-10;

Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CKGKGAKCSRLMYDCTGSCRSKGK 25

Db 1 CKGKGAKCSRLMYDCTGSCRSKGK 25

RESULT 11

AAW72605

ID AAW72605 standard; peptide; 25 AA.

XX

AC AAW72605;

XX

DT 06-JAN-1999 (first entry)

XX

DE Conus genus natural omega-conopeptide MVIIA/SNX-111.

XX

KW Conus genus; marine snail; cone snail; omega-conopeptide; analgesia;
 KW nociceptive pain; neuropathic pain; neuronal tissue; conotoxin;
 KW inflammation; schizophrenia; tardive dyskinesia; acute dystonic reaction;
 KW rheumatoid arthritis; epilepsy.

XX

OS Conus sp.

XX

PN USS824645-A.

XX

PD 20-OCT-1998.

XX

PF 01-NOV-1996; 96US-0742774.

XX

PR 15-APR-1993; 93US-0049794.

XX

PR 30-DEC-1991; 91US-0814759.

XX

PR 03-JUL-1996; 96US-0675354.

XX

PR 01-NOV-1996; 96US-0742774.

XX

PA (NEUR-) NEUREX CORP.

XX

PI Gohil KC, Justice A, Miljanich GP, Singh T, Valentino KL;

XX

DR WPI; 1998-582596/49.

XX

PT Treatment of inflammation, comprises administration of
 PT omega-conopeptide - effective to block voltage-gated calcium
 PT channels, bind with high affinity to omega-conopeptide binding site,
 PT and inhibit neuro-transmitter release

XX

PS Disclosure; Fig 1; 58pp; English.

XX

CC A method has been developed for the treatment of inflammation in a
 CC subject. The method comprises administration of an omega-conopeptide
 CC effective to: (i) block voltage-gated calcium channels; (ii) bind with
 CC high affinity to an omega-conopeptide binding site; and (iii) inhibit
 CC neurotransmitter release from nervous tissue. The method is used to
 CC treat inflammation and associated pain. The treatment can also be used
 CC to produce analgesia (especially in subjects experiencing neuropathic
 CC pain); and to treat schizophrenia, tardive dyskinesia and acute dystonic
 CC reactions, rheumatoid arthritis, and epilepsy. The present sequence
 CC represents a natural omega-conopeptide. Omega-conopeptides are
 CC components of peptide toxins produced by marine snails of the genus
 CC Conus, and which act as calcium channel blockers.

XX

SQ Sequence 25 AA;

Query Match 87.3%; Score 151; DB 19; Length 25;

Best Local Similarity 100.0%; Pred. No. 6.9e-10;

Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CKGKGAKCSRLMYDCTGSCRSKGK 25

Db 1 CKGKGAKCSRLMYDCTGSCRSKGK 25

RESULT 12

AAAY42335

ID AAAY42335 standard; peptide; 25 AA.

XX

AC AAAY42335;

XX

DT 20-DEC-1999 (first entry)
 XX Omega-conotoxin OCT MVIIA.
 DE
 XX Calcium channel; neuron; retina; optic nerve; trauma; ischaemia; vision;
 KW prevention.
 KW
 XX Conus sp.
 OS
 XX Key Location/Qualifiers
 FH Disulfide-bond 1..16
 FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 FT Misc-difference 25
 FT /note= "Optionally contains C-terminal amide"
 XX
 XX US5965534-A.
 PN
 XX 12-OCT-1999.
 PD
 XX 13-MAR-1998; 98US-0039168.
 PF
 XX 22-NOV-1995; 95US-0562142.
 PR
 XX (ALCO-) ALCON LAB INC.
 PA
 XX Hellberg M, Pang I, Kapin M;
 PI
 XX WPI; 1999-579926/49.
 DR
 XX Treatment or prevention of retinal or optic nerve head damage comprises
 PT administration of an omega-conotoxin derivative -
 PT
 XX Claim 2; Columns 3-4; 7pp; English.
 PS
 XX This sequence represents omega-conotoxin OCT MVIIA. Omega-conotoxins
 CC selectively block N-type calcium channels responsible for calcium
 CC influx in neurons. Acute retinal or optic nerve damage, which can result
 CC in the loss of vision, is caused by acute trauma and pathological events
 CC such as ischaemia, hypoxia or oedema. The release of excitatory amino
 CC acids is implicated in ischaemia-related neuronal and retinal damage,
 CC with excitatory amino acid release leading to excessive stimulation of
 CC post-synaptic excitatory amino acid receptors, which can result in cell
 CC injury. The release of such excitatory amino acids from presynaptic
 CC nerve terminals is dependent upon an elevation of calcium in the nerve
 CC terminal. This presynaptic calcium influx is mediated by the N-type
 CC calcium channels that are inhibited by omega-conotoxins. Intracellular
 CC administration of at least one omega-conotoxin could be used for the
 CC treatment or prevention of retinal or optic nerve head damage resulting
 CC from acute traumatic or acute ischaemic events.
 XX
 SQ Sequence 25 AA;
 Query Match 87.3%; Score 151; DB 20; Length 25;
 Best Local Similarity 100.0%; Pred. No. 6.9e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 CKGKGAKCSRLMYDCCCTGSCRSKGC 25
 DB 1 CKGKGAKCSRLMYDCCCTGSCRSKGC 25
 RESULT 13
 AAW95564
 ID AAW95564 standard; protein; 25 AA.
 XX
 AC AAW95564;
 XX
 DT 29-MAR-1999 (first entry)
 TT
 DE Omega-conopeptide MVIIA/SNX-111.
 XX
 KW Omega-conopeptide; peptide toxin; snail; calcium channel blocker;

KW analgesia; guinea pig ileum; omega-conotoxin; pain; neuropathic.
 XX
 XX Synthetic.
 OS Conus sp.
 XX
 FH Key Location/Qualifiers
 FT Modified-site 25
 FT /note= "C-terminal amide"
 XX
 XX US5859186-A.
 PN
 XX 12-JAN-1999.
 PD
 XX 03-JUL-1996; 96US-0675354.
 PF
 XX 15-APR-1993; 93US-0049794.
 PR 30-DEC-1991; 91US-0814759.
 PR 03-JUL-1996; 96US-0675354.
 XX
 XX (NEUR-) NEUREX CORP.
 PA
 XX Gohil KC, Justice A, Miljanich GP, Singh T, Valentino KL;
 PI
 XX WPI; 1999-120002/10.
 DR
 XX Production of analgesia in mammal - by administration of omega
 PT cono-peptide(s)
 PT
 XX Claim 3; Fig 1; 59pp; English.
 PS
 XX Sequences AAW95564-573 represent primary sequences of natural omega-
 CC conopeptides. Omega-conopeptides are components of peptide toxins
 CC produced by marine snails of the genus Conus, and which act as calcium
 CC channel blockers. The invention relates to a method of producing
 CC analgesia in a mammal that comprises administering an omega conopeptide
 CC having activities in (a) inhibiting electrically stimulated contraction
 CC of guinea pig ileum and (b) selectively binding to omega conopeptide
 CC MVIIA binding sites in neuronal tissue, where these activities are
 CC within the ranges of those of omega-conotoxins MVIIA and PVIA. The method
 CC is used for treating chronic pain, especially neuropathic pain. The
 CC present sequence is a specifically claimed example of an
 CC omega-conopeptide that can be used in the method of the invention.
 XX
 SQ Sequence 25 AA;
 Query Match 87.3%; Score 151; DB 20; Length 25;
 Best Local Similarity 100.0%; Pred. No. 6.9e-10;
 Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 CKGKGAKCSRLMYDCCCTGSCRSKGC 25
 DB 1 CKGKGAKCSRLMYDCCCTGSCRSKGC 25
 RESULT 14
 AAB14352
 ID AAB14352 standard; peptide; 25 AA.
 XX
 AC AAB14352;
 XX
 DT 06-DEC-2000 (first entry)
 TT
 XX Omega-conopeptide MVIIA/SNX-111.
 DE
 XX Marine snail; omega-conopeptide; calcium channel blocker; MVIIA; SNX-111;
 KW toxin; analgesic; antiinflammatory; anticonvulsant; neuroleptic;
 KW norepinephrine release inhibitor; schizophrenia; tardive dyskinesia;
 KW acute dystonic reaction; inflammation; epilepsy.
 XX
 OS Conus sp.
 XX
 FH Key Location/Qualifiers
 FT Disulfide-bond 1..16

FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 FT Modified-site 25 /note= "C-terminal amide"

US6087091-A.

11-JUL-2000.

23-APR-1999; 99US-0298017.

01-NOV-1996; 96US-0742774.

15-APR-1993; 93US-0049794.

03-JUL-1996; 96US-0675354.

21-AUG-1998; 98US-0138439.

30-DEC-1991; 91US-0814759.

(ELAN-) ELAN PHARM INC.

Singh T, Gohil KC, Valentino KL, Miljanich GP, Justice A;

WPI; 2000-490177/43.

Selecting a compound for producing analgesia involves measuring

activity of test compound in blocking voltage-gated calcium channels,

binding to omega conopeptide binding site and inhibiting norepinephrine

release

Example 1; Fig 1; 58pp; English.

The present sequence is an omega-conopeptide from marine snails of

the genus Conus. Omega-conopeptides are components of peptide toxins

produced by the cone snails, and which act as calcium channel blockers.

Natural omega-conopeptides and their derivatives may be useful for

producing analgesia in nociceptive and neuropathic pain. The peptides

bind to omega-conopeptide binding sites, which are present mainly in

neuronal tissue, and inhibit norepinephrine release from nervous tissue.

Conopeptides such as MWIIA and TVIA are effective as therapeutic agents

for treating neurogenic conditions such as schizophrenia, tardive

dyskinesia and acute dystonic reactions, inflammation and epilepsy.

Sequence 25 AA;

Query Match 87.3%; Score 151; DB 21; Length 25;

Best Local Similarity 100.0%; Pred. No. 6.9e-10;

Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 15

AA56473

ID AAY56473 standard; peptide; 25 AA.

XX

AC AAY56473;

XX

FT Disulfide-bond 8..20
 FT Disulfide-bond 15..25
 FT Modified-site 25 /note= "C-terminal amide"

US6087091-A.

11-JUL-2000.

23-APR-1999; 99US-0298017.

01-NOV-1996; 96US-0742774.

15-APR-1993; 93US-0049794.

03-JUL-1996; 96US-0675354.

21-AUG-1998; 98US-0138439.

30-DEC-1991; 91US-0814759.

(ELAN-) ELAN PHARM INC.

Singh T, Gohil KC, Valentino KL, Miljanich GP, Justice A;

WPI; 2000-490177/43.

Selecting a compound for producing analgesia involves measuring

activity of test compound in blocking voltage-gated calcium channels,

binding to omega conopeptide binding site and inhibiting norepinephrine

release

Example 1; Fig 1; 58pp; English.

The present sequence is an omega-conopeptide from marine snails of

the genus Conus. Omega-conopeptides are components of peptide toxins

produced by the cone snails, and which act as calcium channel blockers.

Natural omega-conopeptides and their derivatives may be useful for

producing analgesia in nociceptive and neuropathic pain. The peptides

bind to omega-conopeptide binding sites, which are present mainly in

neuronal tissue, and inhibit norepinephrine release from nervous tissue.

Conopeptides such as MWIIA and TVIA are effective as therapeutic agents

for treating neurogenic conditions such as schizophrenia, tardive

dyskinesia and acute dystonic reactions, inflammation and epilepsy.

Sequence 25 AA;

Query Match 87.3%; Score 151; DB 21; Length 25;

Best Local Similarity 100.0%; Pred. No. 6.9e-10;

Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

RESULT 15

AA56473

ID AAY56473 standard; peptide; 25 AA.

XX

AC AAY56473;

XX

PF 21-AUG-1998; 98US-0138439.

XX 01-NOV-1996; 96US-0742774.

PR 15-APR-1993; 93US-0049794.

PR 03-JUL-1996; 96US-0675354.

PR 30-DEC-1991; 91US-0814759.

XX (ELAN-) ELAN PHARM INC.

PA Justice A, Singh T, Valentino KL, Miljanich GP, Gohil KC;

XX WPI; 2000-038270/03.

DR Measuring the activity of test compounds in blocking voltage-gated

XX calcium channels, binding to the omega conopeptide binding site and

XX inhibiting norepinephrine (noradrenaline) release for treating

XX inflammation -

XX Disclosure; Fig 1; 47pp; English.

XX A method has been developed of selecting a test compound for treating

XX inflammation. The method comprises measuring the activity of the test

XX compound in blocking voltage-gated calcium channels, binding to the

XX omega conopeptide binding site and inhibiting norepinephrine

XX (noradrenaline) release from nervous tissue. The method is useful for

XX selecting compounds for treating inflammation. The selected compounds

XX are capable of producing analgesia in a mammalian subject with chronic

XX or intractable pain. Analgesia caused by selected compounds may reduce

XX the reliance on opioid analgesic agents of the prior art which cause

XX dependency and tolerance, requiring potentially dangerous increases in

XX opioid doses to achieve the analgesic effect. The present sequence

XX represents an omega conopeptide given in the present invention.

XX SQ Sequence 25 AA;

Query Match 87.3%; Score 151; DB 21; Length 25;

Best Local Similarity 100.0%; Pred. No. 6.9e-10;

Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

DB 1 CKGKGAKCSRLMYDCTGSCRSKGC 25

Search completed: March 17, 2003, 07:23:41

Job time : 33.542 secs

Omega conopeptide; analgesic; nociceptive; neuropathic; pain;

conotoxin; marine snail; peptide toxin; inflammation; binding;

voltage-gated calcium channel; inhibition; norepinephrine;

noradrenaline; anti-inflammatory.

Conus sp.

US5994305-A.

30-NOV-1999.

XX